

**CS CONSULTING
GROUP**
DUBLIN - LONDON - LIMERICK

CRONIN & SUTTON CONSULTING (part of the CS Consulting Group)
19-22 Dame Street, Dublin 2, D02 E267, Ireland

T | 353 1 5480863

E | info@cscsconsulting.ie

W | www.cscsconsulting.ie

Stage 1 Demolition and Construction Waste Management Plan

Proposed Shared Living Development at Brady's Public House, Old Navan Road, Dublin 15

Client: Bartra Property (Castleknock) Limited

Job No. B094

August 2019

Limerick Office:

45 O'Connell Street
Limerick, V94 XE18
Ireland

T: 353 (0)61 594988
E: info@cscsconsulting.ie
W: www.cscsconsulting.ie

London Office:

45 Beech Street
London, EC2Y 8AD
UK

T: +44 (0) 207 070 3660
E: info@cscsconsultinguk.com
W: www.cscsconsultinguk.com

KP & Associates Consulting Engineers Ltd. T/A Cronin & Sutton Consulting
Directors: K. Cronin, D. Rehill, O. Sullivan, P. Sutton
Associate Directors: N. Barrett, R. Fitzmaurice, M. McEntee, L. McNamee Associates: C. Twomey, C. Barry
Registered Office: 1st Floor, 19-22 Dame Street, Dublin 2, D02 E267, Ireland | Company No. 505303





CS CONSULTING
GROUP

DUBLIN - LONDON - LIMERICK

STAGE 1 DEMOLITION & CONSTRUCTION WASTE MANAGEMENT PLAN

PROPOSED SHARED LIVING DEVELOPMENT AT BRADY'S PUBLIC HOUSE, OLD NAVAN ROAD, DUBLIN 15

CONTENTS

1.	INTRODUCTION	1
2.	GOVERNMENTAL POLICY	2
3.	DESCRIPTION OF THE PROPOSED DEVELOPMENT	7
4.	WASTE MANAGEMENT ORGANISATION	10
5.	DEMOLITION WASTE GENERATED BY THE PROPOSED DEVELOPMENT	11
6.	CONSTRUCTION WASTE GENERATED BY THE PROPOSED DEVELOPMENT	16
7.	OPERATIONAL WASTE GENERATED BY THE PROPOSED DEVELOPMENT	19
8.	CONCLUSION	19

This Report has been prepared by CS Consulting for the benefit of its Client only. The contents of this Report are shared with interested parties for information only and without any warranty or guarantee, express or implied, as to their accuracy, reliability or completeness. This Report cannot be relied on by any party other than the party who commissioned it.

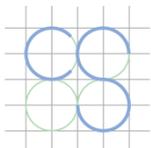
File Location: B_JOBS\Job-B088\B_Documents\C_Civil\A_CS Reports

Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
B094	LG	NB	NB	24.10.2018	-
B094	LG	NB	NB	07.05.2019	A
B094	LG	NB	NB	26.08.2019	B
B094	LG	NB	NB	13.08.2020	C

1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by Bartra Property (Castleknock) Limited to prepare a Stage 1 Demolition and Construction Waste Management Plan in support of a proposed residential development at Brady's Inn, Old Navan Road, Dublin 15.

The purpose of this Waste Management Plan (WMP) is to ensure that waste generated during the demolition and construction phases of the development will be managed and disposed of in a way that ensures the provisions of the Waste Management Acts 1996 to 2013 and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021 are complied with. It will also ensure that optimum levels of waste reduction, re-use and recycling are achieved.



2.0 GOVERNMENTAL POLICY

2.1 National Level

The publication, "*Changing Our Ways*", which identifies objectives for the prevention, minimization, reuse, recycling, recovery and disposal of waste in Ireland, was issued by the Government in September 1998. The target for Construction and Demolition waste in this Strategy was to recycle at least 50% of C&D waste by 2003, with an increase to at least 85% by 2013.

The Forum for the Construction Industry, which represents the waste sector of the industry, released a report titled "*Recycling of Construction and Demolition Waste*" concerning the development and implementation of a voluntary construction industry programme to meet the governments objectives for the recovery of construction and demolition waste. The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002 and subsequently produced "*Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects*" in July 2006. There are thresholds set out in the Guidelines to determine whether a C&D WMP is required. The development requires a C&D WMP for new residential developments of 10 houses or more and new developments, including institutional, educational, health and other public facilities, with an aggregate floor area exceeding 1,250m².

The Guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. The guidelines include the following:

- predicted demolition & construction wastes and procedures to prevent, minimise, recycle and reuse wastes;
- waste disposal/recycling of C&D wastes at the site;
- list of sequence of demolition operations to be followed;

- provision of training for waste manager and site crew;
- details of proposed record keeping system;
- details of waste audit procedures and plan;
- details of consultation with relevant bodies, i.e. waste recycling companies, Fingal County Council, etc.

In 2002, the Construction Industry Federation (CIF) issued "*Construction and Demolition Waste Management – a handbook for Contractors and Site Managers*".

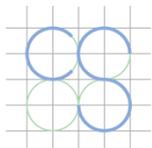
Annually the Environmental Protection Agency (EPA) issue a "*National Waste (Database) Reports*" detailing C&D waste generation and the level of recycling, recovery and disposal of this material, domestic and municipal waste rates, etc.

2.2 Regional Level

A Waste Management Plan for the Dublin Region (comprising Dublin City Council, Fingal County Council, South Dublin County Council & Dun Laoghaire-Rathdown County Council) was in place from 2005-2015, with periodic revisions. This was superseded by the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, which was launched in May 2015.

The Eastern-Midlands Region comprises Dublin City Council, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow County Councils. The Plan provides a framework for the prevention and management of waste in a sustainable manner in these 12 local authority areas.

The three overall performance targets of the Eastern-Midlands Region Waste Management Plan are as follows:



- 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan.
- Achieve a recycling rate of 50% of managed municipal waste by 2020.
- Reduce to 0% the direct disposal of unprocessed municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

The Plan's implementation is led by the Eastern-Midlands Regional Waste Office based in Dublin City Council.

Ireland achieved 68% recovery material recovery of non-hazardous, non-soil & stones C&D wastes in 2014. One of the primary objectives of the Plan is to achieve more sustainable waste management practices in the C&D sector. This requires the following actions:

- The development company must employ best practice at the design, planning and construction stage to ensure waste prevention and recycling opportunities are identified and implemented.
- Waste Collectors are required to introduce source-separation of recyclables and introduce graduated charges to incentivise better site practices.

Local Authorities will ensure the voluntary industry code is applied to development control, to regulate the collection and treatment of waste to meet the Plan objectives and will also work to develop markets for recycled materials.

2.3 Legislative Requirements

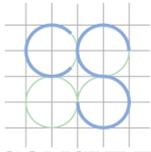
One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 (as amended by the Waste Management (Amendment) Act 2001) and

subsequent Irish legislation, is the principle of 'Duty of Care'. This implies that the waste producer is responsible for waste from the time it is generated through to its legal disposal (including its method of disposal). Following on from this is the concept of 'Polluter Pays', whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for collection and transport of waste).

Waste contractors are typically engaged to transport waste off-site. Each contractor must comply with the provisions of the Waste Management Act 1996 and associated Regulations. This includes the requirement that a contractor handle, transport and dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities. A collection permit to transport waste must be held by the relevant contractor, which is issued by the National Waste Collection Permit Office (NWCPO).

Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste unless in possession of a waste permit granted by the local authority under the Waste Management (Facility Permit & Registration) Regulations 2007 or a waste license granted by the EPA. The permit/license held will specify the type and quantity of waste able to be received, stored, sorted, recycled and/or disposed of at the specified site.

Should the initial assessment of the site indicate that material would have to be removed from site then the material will be classified in accordance with legislative requirements to determine if the material is classified as hazardous or non-hazardous. All material deemed to be non-hazardous will then be assessed under Waste Acceptance Criteria requirements for disposal to a licence landfill facility in accordance with 2002 European Landfill Directive [2003/33/EC]. Only material deemed through



independent laboratory analysis to be either inert or non-hazardous can be disposed of at landfill facilities in the Republic of Ireland at present, hazardous material having to be taken abroad for disposal.

The assessment and removal of such material will require the main contractor to employ a suitably qualified environmental specialist to develop a soil management and removal plan and ensure full compliance with statutory requirements.

3.0 SITE LOCATION AND PROPOSED DEVELOPMENT

3.1 Site Location

The site is located in a residential area with the N3 and M50 roads nearby to the north and east and the Royal Canal located to the south. The site is bounded by the Old Navan Road to the south, public amenity space to the north, Talbot Downs road to the west and a residential private property to the east. On the site there is an existing two-storey over basement public house with a restaurant on the first floor, we note the public house and restaurant closed in March 2020. The remaining site consists mostly of paved parking that served the public house and restaurant. The site is located in the administrative jurisdiction of Fingal County Council and has a total area of circa 0.317 ha.

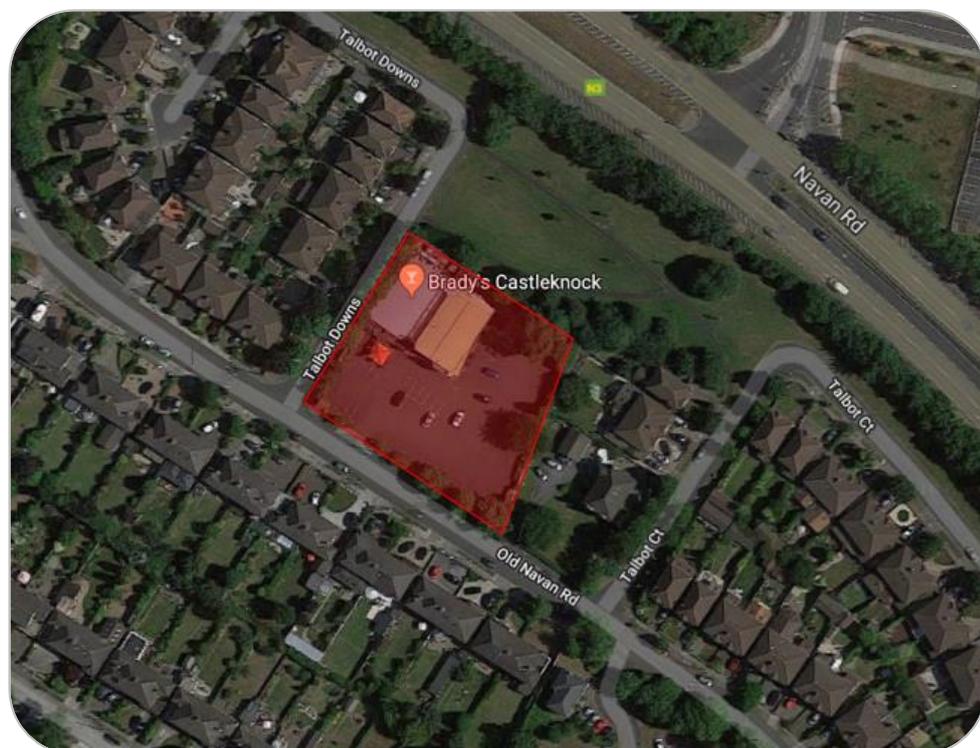
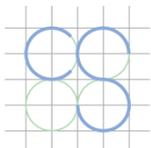


Figure 1 – Site location
(image: Google)



3.2 Proposed Development

Bartra Property (Castleknock) Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this 0.3,170 ha site at Brady's Public House, Old Navan Road, Dublin 15, D15 W3FW.

The development will principally consist of: the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 m²) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 m²) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

The development also consists of the provision of communal living/kitchen/dining rooms at each floor level to serve the residents of each floor; communal resident amenity spaces for all residents including tv/cinema room at basement level, gymnasium and lounge/reception area at ground floor level, a library/study at fourth floor level and a private dining room at fifth floor level; external roof terrace at fourth floor level (78m²) facing north-east, north-west and south-west; external communal amenity courtyards at basement (170 m²) and ground floor level (336 m²); external amenity space at basement level accessed from the communal living/kitchen/dining room (30 m²); balconies at fourth floor level facing north-east (13.8 m²); resident facilities including launderette, linen store, stores and bin store; 2 No. accesses to the public park along the north-eastern boundary; 2 No. car-share parking spaces; a lay-by and delivery bay; emergency gate access to the courtyard (north-west boundary); bicycle parking; boundary treatments; hard and soft landscaping; plant; PV panels; substation; switch room; generator; lighting; and all other associated site works above and below ground.

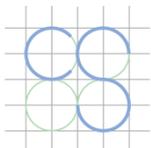
The proposed development shall be constructed in one phase. Bartra Property (Castleknock) Limited intend to apply to An Bord Pleanála for

permission for a strategic housing development at this 0.3,170 ha site at Brady's Public House, Old Navan Road, Dublin 15, D15 W3FW.

The development will principally consist of: the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 m²) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 m²) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

The development also consists of the provision of communal living/kitchen/dining rooms at each floor level to serve the residents of each floor; communal resident amenity spaces for all residents including tv/cinema room at basement level, gymnasium and lounge/reception area at ground floor level, a library/study at third floor level and a private dining room at fourth floor level; external roof terrace at third floor level (78m²) facing north-east, north-west and south-west; external communal amenity courtyards at basement (170 m²) and ground floor level (336 m²); external amenity space at basement level accessed from the communal living/kitchen/dining room (30 m²); balconies at third floor level facing north-east (13.8 m²); resident facilities including launderette, linen store, accessible WC and bin store; 2 No. accesses to the public park along the north-eastern boundary; 2 No. car-share parking spaces; a lay-by and delivery bay; emergency gate access to the courtyard (north-west boundary); bicycle parking; boundary treatments; hard and soft landscaping; plant; PV panels; substation; switch room; generator; lighting; and all other associated site works above and below ground.

The proposed development shall be constructed in one phase.



4.0 WASTE MANAGEMENT ORGANISATION

4.1 Responsibility for Construction Phase Waste Management

A suitably competent and experienced representative of either the client or the lead contractor will be nominated as Construction & Demolition (C&D) Waste Manager for the project. The function of the C&D Waste Manager is to communicate effectively the aims and objectives of the Waste Management programme for the project to all relevant parties and contractors involved in the project, for the duration of demolition and construction works on site.

The C&D Waste Manager will be assisted in this role by the external Safety Consultant. Site Inspections will be carried out on a weekly basis and will incorporate inspection and monitoring of the requirements of the Waste Management Plan.

5.0 DEMOLITION WASTE GENERATED BY THE PROPOSED DEVELOPMENT

Demolition waste shall be generated during development. The management of spoil generated by demolition of the existing industrial building and excavation on site is described within the following section of this document.

The typical type of waste can be summarised as;

- Soil and stones;
- Concrete (including blocks);
- Timber;
- Glass;
- Mixed Metals;
- Gypsum based materials;
- Tiles / Ceramics;
- Insulation Materials (asbestos free);
- Waste electrical and electronic equipment;
- Fixtures and fittings etc

5.1 Estimated Waste Arisings

The EPA issued the European Waste Catalogue in January 2002 and this system was used to classify all wastes and hazardous wastes into a consistent waste classification system across the EU. The EWC for typical waste materials to be expected to be generated during the demolition of the existing buildings are as follows;

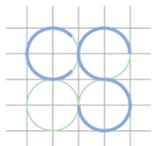


Table 1 - European Waste Catalogue

<u>Waste Material</u>	<u>EWC Code</u>
Non-Hazardous	
Concrete, bricks, tiles, ceramics	17 01
Wood, glass and plastic	17 02
Bituminous mixtures, coal tar and tarred products	17 03
Metals (including their alloys)	17 04
Soil, stones and dredged spoil	17 05
Gypsum-based construction material	17 08
Hazardous	
Electrical and Electronic Components	16 02
Batteries	16 06
Wood Preservatives	03 02
Liquid Fuels	13 07
Soil and stones containing dangerous substances	17 05 03
Insulation materials containing asbestos	17 06 01
Other insulation materials consisting of or containing dangerous substances	17 06 03
Construction materials containing asbestos	17 06 05
Construction and demolition waste containing mercury	17 09 01
Construction and demolition waste containing PCBs	17 09 02
Other construction and demolition wastes containing dangerous substances	17 09 03

5.2 Demolition waste Estimates

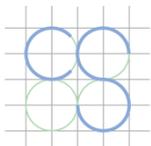
The existing buildings areas in total is approximately 1,243 m². floor space. The BRE Waste Benchmark Data as of June 2012 provides guidance on the demolition waste estimates based on the gross internal floor area. Refer to the "Construction Management Plan" accompanying this submission for reference to demolition construction traffic.

Project Type	Number of projects data relates to	Average Tonnes/100m ²	Number of projects data relates to	Average Tonnes/£100K
Residential	256	16.8	260	12.3
Public Buildings	23	22.4	24	11.2
Leisure	21	21.6	20	10.5
Industrial Buildings	23	12.6	24	5.7
Healthcare	22	12.0	22	9.9
Education	60	23.3	60	11.8
Commercial Other	4	7.0	2	3.6
Commercial Offices	14	23.8	11	6.3
Commercial Retail	48	27.5	47	11.6
Total number of projects	471		470	

Table 2: BRE Waste Benchmark

For a building area of 1,243 m² and an average of 7 tonnes per 100 m² of floor area, the demolition waste generated translates to **87 tonnes**.

The breakdown of demolition waste produced on a typical construction site is classified as follows;



Waste Types	%
Glass	3
Concrete, Bricks, Tiles, Ceramics	64
Plasterboard	4
Asphalt, Tar and Tar products	6
Metals	2
Slate	8
Timber	13
Total Waste	100

Table 3: Breakdown of Demolition waste

5.3 Mitigation Measures

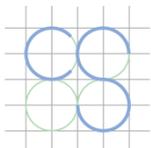
A site-specific Construction and Development Waste Management Plan (C&D WMP) for the demolition and construction of the development will be employed to ensure effective waste management and recycling of waste generated at the site.

Mitigation measures proposed are summarised below:

- On-site segregation of all waste materials into appropriate categories including:
- made ground, soil, subsoil, bedrock
- concrete, bricks, tiles, ceramics, plasterboard
- metals

- dry recyclables e.g. cardboard, plastic, timber
- All waste materials will be stored in skips or other suitable receptacles in a designated area of the site.
- An asbestos survey has been completed in the demolished buildings.
- Wherever possible, left over materials (e.g. timber off cuts) and any suitable demolition materials shall be re-used on-site.
- Any potentially contaminated soil to be removed from site will be tested to confirm its contamination status and subsequent management requirements.
- All waste leaving site will be recycled, recovered or reused where possible, with the exception of those waste streams where appropriate facilities are currently not available.
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably licensed or permitted facilities.
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

These mitigation measures will ensure the waste arising from the demolition and construction of the development is dealt with in compliance with the provisions of the Waste Management Act 1996 (as amended 2001), and associated Regulations, the Litter Act of 1997 and the Dublin Waste Management Plan (2005 - 2010), and achieve optimum levels of waste reduction, re-use and recycling.



6.0 CONSTRUCTION WASTE GENERATED BY THE PROPOSED DEVELOPMENT

6.1 Construction Waste Classification

Waste generated during construction at a typical site includes the following:

- Concrete, bricks, tiles, and cement
- Wood
- Glass
- Plastics
- Bituminous mixtures, coal tar, and tarred products
- Metals (including their alloys)
- Soil and stones
- Insulation materials (possibly including asbestos-containing materials)
- Gypsum-based construction material
- Materials containing mercury
- PCB-containing materials (e.g. sealants, resin-based floorings, capacitors, etc.)
- Waste electrical and electronic equipment
- Oil wastes and waste of liquid fuels
- Batteries and accumulators
- Packaging (paper/cardboard, plastic, wood, metal, glass, textile, etc.)

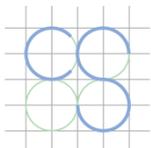
As referred to under sub-section 5.1 Table 1 the EPA issued the European Waste Catalogue (EWC) in January 2002 and this system is used to classify all wastes and hazardous wastes according to a consistent EU-wide system. The EWC classification for typical waste materials to be expected to be

generated during construction of the subject development is given in Table 1.

6.2 Waste Management and Mitigation Measures

The following measures are proposed to ensure effective management of construction waste at the development site, to maximise recycling of construction waste, and to minimise the environmental impact of construction waste.

- On-site segregation of all waste materials into appropriate categories, including:
 - top-soil, sub-soil, bedrock;
 - concrete, bricks, tiles, ceramics, plasterboard;
 - asphalt, tar, and tar products;
 - metals;
 - dry recyclables (e.g. cardboard, plastic, timber).
- All waste material will be stored in skips or other suitable receptacles in a designated waste storage area on the site.
- Wherever possible, left-over material (e.g. timber cut-offs) and any suitable demolition materials shall be reused on or off site.
- Uncontaminated excavated material (top-soil, sub-soil) will be reused on site in preference to the importation of clean fill, as soil to be reused or removed from site must be tested to confirm its contamination status and subsequent management requirements.
- All waste leaving the site will be transported by a suitably licensed/permitted contractor and taken to a licensed/permitted facility.
- All waste leaving the site will be recorded and copies of relevant documentation retained.



These measures are intended to ensure that the waste arising from construction of the proposed development is dealt with in compliance with the provisions of the Waste Management Acts 1996 to 2013, the Litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

6.3 Predicted Impacts of the Proposed Development

Waste materials will be generated during the construction of the proposed development, including the initial site clearance and excavation. Careful management of these, including segregation at source, will help to ensure maximum recycling, reuse and recovery is achieved, in accordance with current local and national waste targets. It is expected, however, that a certain amount of waste will still need to be disposed of at landfill.

Given the provision of appropriate facilities, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from waste storage are expected to be minimal. Particular attention must be given to the appropriate management of any construction waste containing contaminated or hazardous materials. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

In summary, with a high level of due diligence carried out at the site, it is envisaged that the environmental impact of the construction phase of the proposed development will be of small scale and short duration, with respect to waste management.

7.0 OPERATIONAL WASTE GENERATED BY THE PROPOSED DEVELOPMENT

Municipal waste comprises household waste as well as commercial and other waste that, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents. In the context of this report, municipal waste consists of three main elements: household, commercial (including non-process industrial waste), and street-cleansing waste (street sweepings, street bins and municipal parks and cemeteries maintenance waste, electoral campaign material).

For details of the estimated operational waste arisings of the proposed development, as well as the operational waste storage and collection measures to be implemented, please refer to the Operational Waste Management Plan prepared by AWN Consulting and submitted under separate cover in support of this planning application.

8.0 CONCLUSION

This document outlines the principles and measures by which the waste generated during the demolition and construction phases of the proposed development will be managed and disposed of in compliance with the provisions of the Waste Management Acts 1996 to 2013 and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021. It describes the measures by which optimum levels of waste reduction, re-use and recycling shall be achieved.